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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,728	03/29/2004	Hiroyuki Takamura	CU-3663 RJS	1431

7590 10/22/2004

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EXAMINER

CHANG, CHING

ART UNIT PAPER NUMBER

3748

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/811,728

Applicant(s)

TAKAMURA, HIROYUKI

Examiner

Ching Chang

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ***Claims 3-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Sada (US Patent 5,997,988).***

Sada discloses a valve train (See Fig. 3) for an internal combustion engine comprising a cam lobe (4) fixed on a cam shaft (5) and a roller follower (1) provided with a roller (11) to come in rotation-contact with the cam lobe, wherein the surface roughness Ra of the outer circumferential surface (11a) of the roller is 1.4 or 1.1 μ m (within the range of 0.4 to 2.2 μ m) (See ABSTRACT; Table 1), wherein the surface roughness Ra of the outer circumferential surface (7) of the cam lobe is 1.4 or 1.1 μ m (within the range of 0.4 to 2.2 μ m) (See Col. 3, line 30 through Col. 5, line 40).

3. ***Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Murase (JP '913).***

Murase discloses a valve train (See Fig. 1) for an internal combustion engine comprising a cam lobe (20) fixed on a cam shaft (12) and a roller follower (11, 13) provided with a roller (13) to come in rotation-contact with the cam lobe, wherein the surface roughness Ra of the outer circumferential surface (13a) of the roller is 1 μ m (within the range of 0.4 to 2.2 μ m) (See ABSTRACT; Paragraphs 0018 through 0021).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. ***Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sada (US Patent 5,997,988) in view of Nishioka et al. (US Patent 6,367,439).***

Sada discloses a valve train (See Fig. 3) for an internal combustion engine comprising a cam lobe (4) fixed on a cam shaft (5) and a roller follower (1) provided with a roller (11) to come in rotation-contact with the cam lobe, and the surface roughness Ra of the outer circumferential surface (7) thereof is 1.4 or 1.1 μ m (within the range of 0.4 to 2.2 μ m)(See Col. 3, line 30 through Col. 5, line 40), wherein the surface roughness Ra of the outer circumferential surface (11a) of the roller is 1.4 or 1.1 μ m (within the range of 0.4 to 2.2 μ m)(See ABSTRACT; Table 1).

Sada discloses the invention as recited above, however, fails to disclose the cam lobe being made of an iron based sintered material.

The patent to Nishioka on the other hand, teaches that it is conventional in the cam art, to have utilized a cam (1) made of an iron based sintered material (See Col. 4, line 46 through line 67) for an engine valve train.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the cam made of an iron based sintered material as taught by Nishioka in the Sada device, since the use thereof would provide an improved engine train with a durable cam rotating contact surface.

6. ***Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murase (JP '913) in view of Sada (US Patent 5,997,988).***

Murase discloses the invention, however, fails to disclose the outer circumferential surface roughness of the cam lobe being 0.4 to 2.2 μm .

The patent to Sada on the other hand, teaches that it is conventional in the art of rolling contact machine part, to have manufactured a cam lobe with the outer circumferential surface roughness in 1.4 or 1.1 μm , in a rolling contact with a roller of an engine valve train.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the rolling contact surface roughness of a cam lobe as taught by Sada in the Murase device, since the use thereof would provide a better holding of oil film and wear resistance for a cam of an engine valve train.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Saka et al. (US Patent 4,485,770).
- Yamashita et al. (US Patent 5,456,136).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (703)306-3478. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703)308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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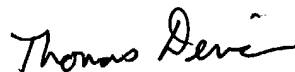
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Patent Examiner

A handwritten signature in cursive script, appearing to read "Ching Chang".

Ching Chang

A handwritten signature in cursive script, appearing to read "Thomas Denion".

THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700